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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,796	12/29/2004	Hiroshi Kojima	123745	3067

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OLIFF & BERRIDGE, PLC
P.O. BOX 320850
ALEXANDRIA, VA 22320-4850

EXAMINER	
MATZEK, MATTHEW D	
ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/519,796	KOJIMA, HIROSHI	
	Examiner	Art Unit	
	MATTHEW D. MATZEK	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 January 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4 and 6-11* is/are pending in the application.

4a) Of the above claim(s) *9 and 10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3, 4, 6-8 and 11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 December 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

1. The amendment dated 1/12/2009 has been fully considered and entered into the record. New claim 11 has been added and contains no new matter. Claims 1, 3, 4 and 6-11 remain pending with claims 9 and 10 withdrawn from consideration. Claims 1, 3, 4, 6-8 and 11 remain active.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1, 4, 6-8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al. (EP 0 998 182 A2) in view of Miyake (JP 62-107039).

a. Ueda et al. disclose an electromagnetic shield plate comprising a transparent substrate [0011], a conductive grid [0024] of metal particles [0018] that forms the claimed mesh metal layer. The mesh layer is preferably covered with a metallic layer of copper [0032 and 0033]. The metallic layer structure may comprise multiple layers and the uppermost is preferably blackened to suppress the reflection of visible light. If multiple layers of metal are to be used the uppermost layer is to be blackened to suppress the reflection of visible light [0033]. The blackening process may be performed using a sulfuration or oxidation treatment [0034]. The blackened layer may then be further coated using an electroplating process such as chromate plating to minimize the variation of thickness of the lower blackened metallic layer. This last, chromate plating leveling

layer would also necessarily be black because it is located on the exterior of the shield plate and would also need to suppress the reflection of visible light. The chromate plating layer serves as the claimed density-intensifying layer as it is formed by the same process as Applicant and would also serve to prevent the copper particles from coming off of the metal mesh layer as claimed. The disclosure of Ueda et al. is silent as to the use of a Cu-Co alloy for the blackened, shielding layer.

b. Miyake teaches the use of a Cu-Co alloy for use as an electromagnetic wave shielding material (claim 1) as a replacement for copper (working example).

c. Ueda et al. and Miyake are from the same field of endeavor (i.e. electromagnetic shielding materials).

d. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have replaced the copper layer of Ueda et al. with the with the alloy composition of Miyake. The skilled artisan would have been motivated by the desire to create an article that has superior corrosion resistance and high conductivity on a metal foil for an electromagnetic shield as set forth in Miyake.

e. Claim 4 is rejected as metallic layer may be formed using electro-deposition [0035] and would result in the same structure afforded by the claimed cathodic electro-deposition process. The presence of process limitations on product claims, in which the product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. *In re Stephens*, 145 USPQ 656. Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to

Applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi,* 218 USPQ 289, 292.

f. Claim 6 is rejected as the transparent conductive film is formed over the conductive geometric pattern to cover the entire surface of the electromagnetic shield plate. This film layer serves to shield near-infrared radiation and provide surface resistance [0045]. The relative depth of transparent conductive film and number of layers are result-effective variables affecting the properties of the film [0045]. Consequently, absent a clear and convincing showing of unexpected results demonstrating the criticality of the depth of the resin layer, it would have been obvious to one of ordinary skill in the art to optimize this result-effective variable by routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).

g. Claims 7 and 8 are rejected as the transparent conductive film may cover the entire surface of the electromagnetic shield plate thereby filling up the openings in the mesh metal layer [0042]. The transparent conductive film may comprise a color tone correcting near-infrared light absorbing agent [0045].

h. The thickness of the metallic layer is preferably 20 microns or less [0033]. Claim 11 is rejected as it would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the density-intensifying layer with a thickness from 0.001 to 0.1 micron because the purpose of the layer is to minimize the variation of thickness of the lower blackened metallic layer and its thickness may only be a fraction of its underlying metallic layer to prevent it from further contributing to any overall thickness variation. Since it has been held that where the general conditions of a claim

are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al. (EP 0 998 182 A2) and Miyake (JP 62-107039) as applied to claim 1 above, and further in view of Kadokura et al. (US 5,158,657). The disclosure of Ueda et al. and Miyake are silent as to the size of the particle for use in the blackened layer.

a. Kadokura teaches the creation of a circuit substrate and process for its production comprising a conductive film layer **3** that is formed via electro-deposition. The conductive film layer is made conductive with a powder comprising Co or Cu with particle sizes preferably ranging from 0.05 to 1 micron (col. 5, lines 46-55).

b. Ueda et al. and Kadokura are from the same field of endeavor (i.e. electromagnetic shielding materials), the purpose disclosed by Kadokura would have been recognized in the pertinent art of Ueda et al.

c. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have made the blackened layer of Ueda et al. with the particle sizes taught by Kadokura. The skilled artisan would have been motivated to use particles of that specific size because smaller particles would cause secondary agglomeration and larger particles would cause a problem of sedimentation of particles (col. 5, lines 25-31).

Response to Arguments

4. Applicant's arguments filed 1/12/2009 have been fully considered but they are not persuasive.

5. Applicant argues that the chromate plating layer of Ueda does not teach or suggest the claimed density-intensifying layer because the blackened layer should be the uppermost layer of the multiple-layer metallic structure without any additional layers. Ueda teaches the blackened layer may then be further coated using an electroplating process such as chromate plating to minimize the variation of thickness of the lower blackened metallic layer. This last, chromate plating leveling layer would also necessarily be black because it is located on the exterior of the shield plate and would also need to suppress the reflection of visible light. The chromate plating layer serves as the claimed density-intensifying layer as it is formed by the same process as Applicant and would also serve to prevent the copper particles from coming off of the metal mesh layer as claimed.

6. Applicant argues that the chromate plating of Ueda is used to form one of the multiple metallic layers or the blackened layer itself, not an additional layer which may serve as the claimed density-intensifying layer. As addressed *supra*, the applied reference teaches that chromate plating may be used to level out the surface structure of the blackened metallic layer.

7. Applicant argues that Ueda discloses that to keep variations in thickness of the metallic layer small, an electroplating step should follow an electroless plating step and does not teach or suggest that any layer should be formed over the blackened layer. Examiner has considered this argument and interpretation of the applied reference, but does not agree with Applicant's interpretation of Ueda. Examiner maintains his position that the metallic layer structure may

comprise multiple layers and the uppermost is preferably blackened to suppress the reflection of visible light. If multiple layers of metal are to be used the uppermost layer is to be blackened to suppress the reflection of visible light [0033]. The blackening process may be performed using a sulfuration or oxidation treatment [0034]. The blackened layer may then be further coated using an electroplating process such as chromate plating to minimize the variation of thickness of the lower blackened metallic layer. This last, chromate plating leveling layer would also necessarily be black because it is located on the exterior of the shield plate and would also need to suppress the reflection of visible light. The chromate plating layer serves as the claimed density-intensifying layer as it is formed by the same process as Applicant and would also serve to prevent the copper particles from coming off of the metal mesh layer as claimed. Furthermore, Applicant provides no reasoning as to why the Cu-Co layer and the density-intensifying layer of the Ueda and Miyake disclosures may not both be blackened. This embodiment would be desirable as multiple blackened layers would serve to better absorb light (suppress its reflection), which is of primary concern in Ueda.

8. Applicant argues that Ueda fails to teach or suggest the use of chromate plating following the formation of the blackened layer. This argument has been previously addressed.

9. Applicant argues that Miyake fails to remedy the deficiencies of Ueda. Examiner has relied upon Miyake to teach the use of a Cu-Co alloy layer to replace the copper layer of Ueda. Applicant continues by arguing that it would have not been obvious to combine the disclosures of Ueda and Miyake at least because neither teaches or suggests blackening the layer of Miyake. Examiner has replaced the copper layer of Ueda with the Cu-Co alloy of Miyake. Ueda teaches the blackening of metallic layer. The combination arrives at the claimed invention.

10. Applicant argues that invention of Miyake is specifically designed to be resistant to corrosion and as such it would be more difficult to blacken the Cu-Co alloy than the pure copper. Furthermore, neither reference teaches to use the Cu-Co layer as a blackened layer. Therefore, the applied references fail to arrive at the claimed invention. The methods used to make the blackened layer have not been claimed. Ueda discloses a variety of methods that do not require the corrosive processes of Applicant [0030-0037]. The instant claims only require a blackened layer and there is no reason why the Cu-Co layer of Miyake could be colored black as set forth in Ueda.

11. Applicant argues that the newly claimed thickness of the density intensifying layer is not provided for in Ueda. Examiner would like to point out that Ueda does provide for a thickness teaching for the blackened layer, but does not provide a thickness for the density intensifying layer. Claim 11 is rejected as it would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the density-intensifying layer with a thickness from 0.001 to 0.1 micron because the purpose of the layer is to minimize the variation of thickness of the lower blackened metallic layer and its thickness may only be a fraction of its underlying metallic layer to prevent it from further contributing to any overall thickness variation. Since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

12. Applicant argues that Kadokura et al. fail to remedy the deficiencies of the Ueda and Miyake combination. As pointed out by Applicant, Examiner has only relied upon Kadokura to teach particle sizes.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW D. MATZEK whose telephone number is (571)272-2423. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571.272.1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew D Matzek/
Examiner, Art Unit 1794

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 1794